

What is claimed is:

1. An optical transmission system for performing
WDM optical transmission, comprising an optical
5 transmission device and an optical reception device;

wherein said optical transmission device
includes,

an optical-supervisory-signal generation
unit which generates a first optical supervisory signal
10 being arranged on a shorter-wavelength side of main
signals and containing information for use in
determination of continuity of an optical transmission
line and a second optical supervisory signal arranged on a
longer-wavelength side of the main signals and used for
15 supervisory control of optical communication, and

an optical multiplexing unit which
generates a wavelength-multiplexed signal by optically
multiplexing the main signals and the first and second
optical supervisory signals, and transmits the wavelength-
20 multiplexed signal onto said optical transmission line;
and

said optical reception device includes,

an optical demultiplexing unit which
receives said wavelength-multiplexed signal, and optically
25 demultiplexes the wavelength-multiplexed signal into said
main signals, said first optical supervisory signal, and
said second optical supervisory signal, and

an optical-supervisory-signal reception unit which determines whether or not said optical transmission line is optically continuous, based on the first optical supervisory signal, and performs supervisory control of optical communication based on the second optical supervisory signal.

2. The optical transmission system according to claim 1, wherein said first optical supervisory signal generated by said optical-supervisory-signal generation unit contains clock information as said information for use in determination of continuity of said optical transmission line,

said optical-supervisory-signal reception unit performs an operation for extracting said clock information from said first optical supervisory signal, and determines whether or not said optical transmission line is optically continuous, based on whether or not the clock information can be extracted from the first optical supervisory signal, and

said optical-supervisory-signal generation unit and said optical-supervisory-signal reception unit activate an APSD (Auto Power Shut Down) function when the optical-supervisory-signal reception unit determines that the clock information cannot be extracted from the first optical supervisory signal.

3. An optical transmission device for performing WDM optical transmission, comprising:

an optical-supervisory-signal generation unit which generates a first optical supervisory signal being
5 arranged on a shorter-wavelength side of first main signals and containing information for use in determination of continuity of a first optical transmission line and a second optical supervisory signal arranged on a longer-wavelength side of the first main
10 signals and used for supervisory control of optical communication;

an optical multiplexing unit which generates a first wavelength-multiplexed signal by optically multiplexing the first main signals and the first and
15 second optical supervisory signals, and transmits the first wavelength-multiplexed signal onto said first optical transmission line;

an optical demultiplexing unit which receives a second wavelength-multiplexed signal through a second
20 optical transmission line, and optically demultiplexes the second wavelength-multiplexed signal into second main signals, a third optical supervisory signal, and a fourth optical supervisory signal, where the third optical supervisory signal is arranged on a shorter-wavelength
25 side of the second main signals, and the fourth optical supervisory signal is arranged on a longer-wavelength side of the second main signals; and

an optical-supervisory-signal reception unit which determines whether or not said second optical transmission line is optically continuous, based on the third optical supervisory signal, and performs supervisory control of optical communication based on the fourth optical supervisory signal.

4. The optical transmission device according to claim 3, wherein said first optical supervisory signal generated by said optical-supervisory-signal generation unit contains first clock information as said information for use in determination of continuity of said first optical transmission line,

said optical-supervisory-signal reception unit performs an operation for extracting second clock information from said third optical supervisory signal, and determines whether or not said second optical transmission line is optically continuous, based on whether or not the second clock information can be extracted from the third optical supervisory signal, and

said optical-supervisory-signal generation unit and said optical-supervisory-signal reception unit activate an APSD (Auto Power Shut Down) function when the optical-supervisory-signal reception unit determines that the second clock information cannot be extracted from the third optical supervisory signal.